

6263) are very similar to *V. cognata* and would pass for that species in this early stage were it not for a vestige of pubescence on one of the maturer leaf-blades. The fact that both species have purple-tinted leaves during the early spring growth adds to the difficulty in distinguishing them before leaf blade elongation has started. The pistils, however, differ widely (pl. 22) and thus make identification certain when flowers are available. *Viola nephrophylla* occupies a lower life zone, possesses a different rootstock, is entirely without pubescence of any kind as well as without purple tinting of leaves. However, the character of the pistil (pl. 22) shows a somewhat close relationship with *V. McCabeiana*.

Santa Rosa Junior College,
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DR. SETCHELL AND ALASKA WILLOWS

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A phycologist went willow-wise. In 1931, while the writer was with the University of California, Dr. William A. Setchell, then head of the Department of Botany and sixty-seven, planned a summer trip to Alaska with Mrs. Setchell. He decided to collect willows exclusively. What willows were known from Alaska? He looked at herbarium specimens—made mental photographs. What other willows might occur in Alaska? He looked at more herbarium specimens. Said of one (*Salix pseudomonticola* Ball), "It looks like a service-berry" (*Amelanchier*). It does.

In the two summers of 1931 and 1932 Dr. and Mrs. Setchell brought back 619 numbers of willows from Alaska and the Yukon. These contained twenty-one species out of some twenty-four then known to occur in Alaska, as well as many of their varieties. That was remarkable in itself, when we remember that Dr. Setchell travelled only three major north-south routes and the Yukon River. Of the three species he did not get, *Salix ovalifolia* does not occur in the area he covered and *S. polaris* and *S. stolonifera* are rare and of local occurrence.

More remarkable still was the fact that he brought back abundant collections of five species not previously known from Alaska. These were *Salix anglorum* Chamisso, *S. Barrattiana* Hooker (represented by var. *angustifolia* And., *S. albertana* Rowlee), *S. lasiandra* Benthham (represented by var. *lancifolia* (And.) Bebb), *S. pseudomonticola* Ball, and *S. Setchelliana* Ball. The latter, from the snout of the Muldrow Glacier, in Mount McKinley National Park, was new to science and has been found at only two other localities.

His collections added two other varieties not previously known from Alaska and provided material of what later were described as three new varieties, all previously collected by others. He

also greatly extended the known ranges of several species and varieties.

How did he do it? Four answers. 1. By giving attention only to willows. 2. By keen memory and observation. He brought in six Alaskan sets of the willow which "looked like a service-berry." Said he, "Whenever I saw a willow which looked like that, I just collected it." 3. By gathering all the different forms observed at each stop, instead of deciding that they were the same as those collected at previous stops. 4. By making friends with everyone along the route. The Alaska and Yukon railroad furnished a gasoline speeder and "chaffeur" so that he could stop at any willow patch he saw. The steamboat captains told him when they were to stop to load firewood for the boilers at out-of-the-way places and whistled him when ready to leave. They let him dry his specimens in the boiler rooms. Auto drivers halted for a quick grab from roadside willow thickets.

Still more surprises! Out in the Missouri Valley, *Salix missouriensis* is called the "diamond willow" because occasionally it produces diamond-shaped scars or depressions on the stems. These are caused by the atrophy of the lowermost trunk twigs in thickets and the failure of the wound to heal over. If all or most of the lower twigs die, the diamond pattern is that of the phyllotaxy of the species. Such specimens are highly prized for the making of ornamental canes. The closely related *S. lutea* of the Rockies also produces such diamonds. No other species were known to exhibit this phenomenon. At Gulkana in Alaska, Dr. Setchell observed beautifully bicolored log banisters displaying diamond markings. On inquiry, he learned that they were willow poles brought by Indians from the swamps. At Gulkana Roadhouse he found that the Indians had brought in a small log, now in the University botanical museum, and the makings of a beautiful walking stick, now a highly cherished possession of the writer. The material was from *Salix alaxensis*, a tree willow not previously known to produce "diamonds."

Botanists, biologists, agronomists, foresters, geologists, and explorers have been collecting plants in Alaska and Yukon territories for more than forty years. Yet one man, in two summers, added five species and two varieties of a single genus to the known flora. Exceptional results because of an exceptional man? Yes, and that gives us something to think about. Should a democracy cherish quantity or quality? When quintuplets or quadruplets are born, everything which money and science can accomplish is done for them, without regard to their heredity or promise of achievement. Who is seeking to discover and subsidize the superior child singly born?

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